ALKALOSIS A GOOD MARKER OF CACHEXIA AND MORTALITY IN HEMODIALYSIS

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INTRODUCTION AND AIMS

The last years, classic term of uremic cachexia has evolutioned into a new term "protein energy wasting" (PEW) . The new syndrome proposed new antropometric and biochemical diagnostic criteria, these include acidosis, transferrin, cholesterol, albumin….
The PEW last consequence is patient´s dead.
We have studied the death of patients in hemodialysis in our centre during the last ten years.
We search clinical and biochemical variables associated with cachexia.
We define cachexia as anorexia, asthenia, reduced intake and weight loss before death.

METHODS

215 patients died in our Dialysis Unit between January 2005- January 2015.
Retrospectively we recorded clinical and biochemical data (at hospital admission or during last month before death).
We study causes of death in our sample including dialysis withdrawal (defined as death after 72 hours from last dialysis) and sudden cardiac arrest (defined as death out of the hospital).

RESULTS

In the univariate analysis the variables associated with cachexia are showed in Table 1.

	CACHEXIA BEFORE DEATH	NO CACHEXIA BEFORE DEATH	Univariate A.
N	152 (70,7%)	63 (29,3%)	
Age	71,8± 11 y.	68,2± 12 y.	P:0,066
Time in dialysis	62±68 m.	46± 34m	P:0,037
sex	48,7%F/51,3%M	32,6%F/67,4%M	P:0,06
Cardiorenal syndrome	21,1%	9,3%	P:0,08
Dementia	15,3%	2,3%	P.0,02
Ischemic Heart disease	24,3%	39,5%	P:0,055
Dialysis withdrawall	57,6%	25,6%	P:0001
Albumin	2,6±0,6	2,9±0,8	P:0,028
Cholesterol	111,2±41,4	127,4±36	P:0.0023
Potassium	4,3±1.01	4,8±1,06	P:0,052
Transferrin	128±40	162±48	P:0,000
bicarbonate	25,9±4,1	22,9±4,6	P:0,000

ROC curve — 25.5mmol/L
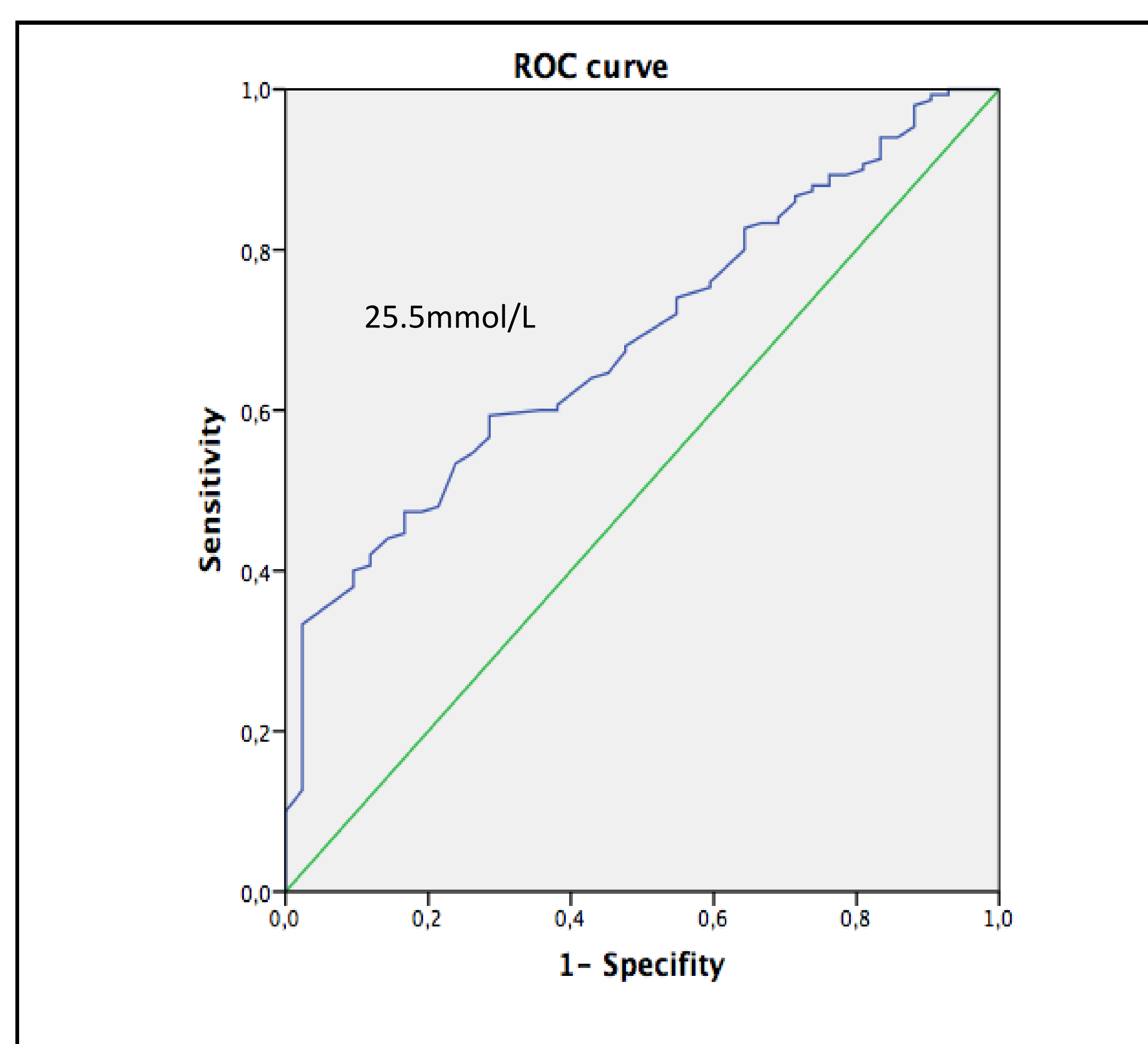
In the multivariate analysis factors independently associated with cachexia in our population were:
- Cardiorenal syndrome (defined as severe heart dysfuntion with crhonic kidney disease impairment in pre-dialysis) (HR:7.1; 95% CI 0,88 to 58.01)
- High bicarbonate levels (HR:1,14, 95% CI 1.03 to 1.26)
- Low transferrin levels (HR: 0.98, 95%CI 0.97 to 0.99)
- Dialysis withdrawall (HR:2.89, 95%CI 1.11 to7.49).

CONCLUSIONS

- When we study cachexia related to mortality , the associated variables are similar to factors included in definition and etiology of PEW, except acidosis.
- Alkalosis in PEW could be a better biochemical marker than acidosis.
- The PEW with high bicarbonate level has the worst pronostic and can not be treated.

References:
E G. Lowrie, N L. Lew SM. Death risk in hemodialysis Patients: the predictive Value of Commonly measured variables and evaluation of Death rate differences between facilities. AJKD vol XV, No 5, 1990, 458-482.
D: Fouque, K. Klantar-Zadeh, J. Kopple at al. A proposed nomenclature and diagnostic criteria of protein-energy wasting in acute and chronic kidney disease. Kidney Int. (2008) 73, 391-398.
Etiology of the Protien-Energy Wasting Syndrome in Chronic Kidny Disease: A Consensus Statement From the International Society of Renal Nutrition and Metabolism (ISRNM) . J Ren Nutr Vol 23, No2, 2013 , 77-90.